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ABSTRACT

Many challenges face the communication instructor wishing to use the Internet, the World Wide Web, and other on-line resources in the classroom; most common are questions of faculty support, facilities limitations, and student limitations. While some members of communication departments may speak glowingly about the future of the on-line classroom, few recognize the level of work involved in creating, updating, and maintaining it. The instructor must additionally become engineer, computer scientist, and lab technician. Some colleagues resist, some academics and administrators have difficulty justifying the high costs, and course maintenance becomes a problem because of the labor-intensive preparations and increased exposure to the students. Available facilities are often inadequate. Limitations regarding students include increased course costs, and coordination and control over students losing sight of course goals. To include use of the Internet in an otherwise regularly designed course presents a struggle for the professor. A course developed about the Internet to provide help would logically contain a small hands-on, on-line component and require the instructor to perform limited course design preparations. Professors who do not invest the time in course development and modification now will be in little demand for the communication programs of tomorrow. (Contains a sample course description and lists of on-line resources, tutors, and development resources.) (CR)

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The Challenge of Developing On-line Courses

(http://www.usouthal.edu/usa/communications/sca/sca96online.html)

by

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Based on a paper presented as part of the panel, "High-Tech Instruction: Using Internet, World Wide Web and Teleconferencing to Enhance the Classroom Experience," sponsored by the Instructional Development Division of the Speech Communication Association's 82nd annual convention, San Diego, CA. (http://www.scassn.org/convention.htm).

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The Challenge of Developing On-line Courses

Introduction

Many challenges face the communication instructor wishing to use the Internet, the World Wide Web, and other on-line resources in the classroom. The most common problems include questions of faculty support, facilities limitations such as software and hardware conflicts, and student limitations. This paper follows these three major lines of analysis. Nevertheless, we believe many benefits flow from the effort to design and implement a high-tech curriculum.

Faculty Support

The efforts of faculty to develop high-tech classes often go unappreciated—and are often frowned upon. While some members of communication departments may speak glowingly about the exciting future of the on-line classroom, few recognize the level of work involved in creating, updating and maintaining an on-line class. Indeed, most cannot imagine the work involved merely in adding an Internet component to an already established course.

For example, to add a single supporting page to the Internet requires the faculty member to learn two software programs—one to generate html language and one to "put the page up." If the faculty member is not satisfied with the visual limitations of, say, Adobe (http://www.adobe.com/) *PageMill*, then he or she must learn yet another software program such as Adobe *Illustrator* or Adobe *Photoshop*. The learning curve for *PageMill* is easy to climb—the learning curve for *Photoshop* isn't.

To provide another illustration, the first writing course in print journalism often uses a lab with computers and a word processing program such as Microsoft

(http://www.microsoft.com/) Word. Add a two-week component on writing for Web newspapers such as *USA Today On-line* (http://www.usatoday.com/) and the instructor now needs to know how to use a Web developing program such as *Adobe PageMill*, a Web browser such as *Netscape* (http://home.netscape.com/)*Navigator*, and a graphics development tool like *Adobe Persuasion* and *Adobe Photoshop*. Additionally, if students are going to upload their work to a Web server, the instructor must know if and how the computer lab is linked to an Internet server, how to upload text and graphics, and how to "debug" uploaded Web pages. The instructor must become engineer, computer scientist, and lab technician in addition to his or her regular instructional role. Some colleagues resist.

In addition, some colleagues, comfortable with the status quo, fear the changes they see coming in their department's curriculum. To illustrate, one of us attended the annual meeting of the Conference of Directors of the Basic Speech Course in Midwestern Universities last spring. A long-time faculty member said, and this is a close quotation: "I think the Internet is nothing more than a huge opportunity for our students to cheat." Another professor, much closer to home, said just last week, "What's going to happen when our students stop going to the library?" And it's not uncommon to hear faculty members asking the same questions they asked when educational television was the rage: "Will I be replaced by a machine?" "Is my education being rendered obsolete by this new technology?" "How can I be expected to compete with interactive multimedia?"

Finally, academics and administrators often have difficulty justifying in their own minds the high costs in personnel and equipment necessary to sustain a high-tech curriculum. (We will hear representative views from our colleagues on this panel.)

Course maintenance becomes a problem as well because of the labor-intensive preparations and increased exposure to the students. On-line materials

must be maintained. Software and hardware must constantly be debugged. In courses that use email and chat rooms to increase faculty-student communication, the professor becomes tied to a chair in order to maintain these additional virtual office hours.

High-tech courses come at high cost in both human effort and equipment costs. Development and maintenance time for these courses can often be double that of ordinary courses, yet this is rarely reflected in evaluations for tenure and promotion. Course reliefs are given for research, and for advising, but seldom provided to faculty so they can update the curriculum. Additional salary is certainly not forthcoming for the extra work. In fact, during the review process, tenure and promotion committees at research-oriented institutions are more likely to suggest that the faculty member spend less time on pedagogical issues and more on developing their research track.

Offering and maintaining a competitive high-tech communication curriculum is expensive in real dollars. As technology becomes more accessible and our society becomes more computer literate, it is not only logical, but imperative to include some aspect of on-line technology in virtually every communication class—from journalism to interpersonal communication. To illustrate, we recently completed the budget for a grant application to build a 20-station laboratory capable of supporting interactive multimedia instruction. The bottom line was in excess of $130,000—and we resisted including a truly high-quality videocapture system because the camera, alone, costs more than $30,000.

Do notice that a commitment to build this lab would require a dean and a department chairperson to make this major investment for a lab to teach twenty students or fewer at a time—even as department and university budgets are barely holding steady or actually declining. For example, Alabama's higher education system is in its third year of "roll-over budgeting."

Finally, it must be pointed out that the "techno-professor" may receive very little support from colleagues who recognize that if an on-line curriculum is adopted department-wide, they would have a great deal of learning to do. Some faculty may also resent a disproportionate amount of limited university resources going toward a few, low-enrollment classes.

Thus the idea of developing high-tech supplements to already existing courses or adding on-line courses to the curriculum generates problems of faculty support.

Facility, Hardware and Software Issues

Available facilities are frequently inadequate to teach on-line or Internet-supported courses. Computer labs, if they exist, are overbooked already and often not connected to the Internet. To further compound the problem, once an on-line course has been approved and space has been secured, the instructor's role as lab administrator kicks into high gear. Software has to be researched and purchased (subject to available funds) and hardware must be upgraded. The instructor must "debug" the system of conflicts and maintain a constant vigil against intentional and unintentional computer sabotage.

Another hardware/software issue with the on-line course is multimedia "textbooks" and lesson plans. We still do not know the best way to develop on-line course materials—what is the most appropriate combination of hypertext and graphics. Materials need to be rewritten in a format to fit the new medium. Some textbooks, like *Communication Technology Update* (http://www.tfi.com/ctu/) are now accompanied by companion Web sites. Some publishers produce CD-ROMS to support their text offerings. Courses often require the instructor to develop on-line materials and exercises. A number of issues must be addressed when considering multimedia course materials including: publisher support, faculty time and

knowledge constraints, student accessibility to materials, and ease of student cheating.

Finally, rapid obsolesce of software, hardware and usage methods mean frequent course changes and frequent laboratory upgrades. These are problems few faculty members wish to add to their already strained working day. Thus the idea of developing high-tech course supplements or on-line courses generates problems related to facilities, hardware and software.

Student Limitations

Another problem area with an on-line curriculum is student limitations. College is already an expensive proposition. The additional hardware, software and text materials necessary to master on-line courses may seem prohibitive. One of us teaches a course about communication and the Internet. It requires two texts—$70.00. It asks to students to pay a laboratory fee—$15.00. It encourages students to own a computer and appropriate software, but merely asks the students to purchase at least five high-density disks. If the course were presented on-line, rather than in a laboratory, the costs to the student would rise some $2000.00 above the $85.00 and tuition.

Matters of coordination and control can become problems in the high-tech classroom. These problems are exacerbated if the course is offered on-line. One such problem occurs when students pursue their own goals rather than the goals imbedded in the course design. For example, in the communication and the Internet course, the aim was to deal with issues and implications for interpersonal and organizational communication. To develop an appreciation for how easy it is to put up a Web site, we asked students to learn *PageMill*, and to design and put up a page of their own. The computer software "toy" took control of their imaginations, and many of the students lost sight of the communication aspects of the course.

Another problem of coordination and control occurs when students do not get the point of an exercise or assignment. If the student does not call this fact to the professor's attention—the more common occurrence, since the student doesn't know she hasn't caught the point—we risk losing her forever. To use the cliche, she falls through the cracks. To illustrate, one of the students who originally enrolled in the communication and the Internet course suddenly, without any warning, withdrew. We called her to find out why. "Well, I'm not really interested in learning to do Internet pages. I'm interested in communication theory." Had she spoken—indeed, had she even looked at the course syllabus—up she would have been able to complete the course.

Yet another problem arises when a course is offered on-line. Unless the professor takes great pains to individualize instruction, and to design for on-line presentation, the students may be tempted to use the power of the Internet to cheat. For example, there exists on the Internet a student-maintained home page entitled *School Sucks*. (http://www.schoolsucks.com) Among other features, at this Web site a student can select term papers to download for presentation to classes.

On-line scholars sometimes take the path of least resistance. If they do not double-check what they find while conducting on-line research, they may well accept misinformation (easily found on the Internet) as factual. A professor can correct the problem only if the student makes it evident.

Finally, locus of control and other personality trait issues continue to present a problem to students who take courses on-line. Some students perform better and retain more information in a structured classroom setting, while others perform better in a less- restrictive, on-line environment. It is beyond the scope of this paper to review the literature on learning theory, personality theory, reminiscence and forgetting, etc. However, readers may find three articles especially interesting. See: D. H. Jonassen and W. H. Hannum, "Research-based Principles for Designing

Computer Software," *Educational Technology* 27:11, 1987, pages 7-14. See, also: H. G. Weller, "Interactivity in Micro-Computer Based Instruction: Its Essential Components and How It Can Be Enhanced," *Educational Technology* 28:2, 1988, pages 23-27. See, also: R. Stead, "Problems With Learning From Computer-Based Simulations: A Case Study In Economics," *British Journal of Educational Technology* 231:2, 1990, pages 106-117.

Developing a course ABOUT the Internet vs. Presenting a Course ON the Internet

To include use of the Internet in an otherwise regularly designed course presents a design struggle to the professor. Materials must be designed especially for the Internet components, and every other part of the course must be adapted and re-designed. Such design problems expand exponentially when the goal is to develop a course for presentation entirely on the Internet.

A final note should be made about the difference in the challenges of developing a course ABOUT the Internet versus presenting a course ON the Internet. A course about the Internet would logically contain at least a small hands-on, on-line component. This would require the instructor to perform limited preparations of the type previously mentioned—in addition to traditional course preparation on the subject matter.

Almost ANY communication course could be presented ON the Internet—given that the student and teacher have adequate support and facilities. However, the development and maintenance time for the instructor increase dramatically with any course that is redesigned to be presented on-line. But it is happening and will continue to happen because it makes sound economic sense. There are so many people who travel, who live in remote places, far removed from a university, and whose schedules do not "mesh" with the academic calendar. All these people

are possible students, and many of them already enroll. For example, a "Yahoo" (http://www.yahoo.com/) search using the keywords "on-line university" yielded 212 "hits, including:

Christopher Newport University - offers a variety of college courses on-line through dial-up and Internet connections. Students can take full college courses for enjoyment, credit, or towards a four year degree. (http://cnuonline.cnu.edu/)

Concordia University Distance Learning - Centre for Continuing Education - Computer Institute in association with Logipac Technologies Inc. offers multimedia on-line training courses. (http://www.logipac.com/)

Diversity University, Inc. - a non-profit organization dedicated to promoting education through on-line services. (http://www.du.org/)

ME/U Knowledge On-line - Mind Extension University and Jones Computer Networks. Delivers educational opportunities from 12 universities and colleges. (http://www.meu.edu/)

Open University - UK@ - providing open and distance learning in Europe, including on-line courses. (http://www.yahoo.com/Regional/Countries/United_Kingdom/Education/Higher_Education/Universities/Open_University__The/)

Some Benefits to an On-line Curriculum

Despite the many challenges facing the instructor developing an on-line curriculum, there are a number of distinct benefits. Including an on-line component in a communication course can provide instant course credibility. Technology courses raise a communication program's profile and perceived credibility within the university and the surrounding community. The program and its faculty are considered experts in the emerging new communication systems.

Students can identify with high-tech courses because they put themselves into it. Student/teacher roles can change to mentor/mentee if on-line interaction is used as a supplement to (rather than a replacement for) interpersonal interaction. Students absorb much of the "culture" of the Internet, thus preparing for convergence not only in the curriculum, but in their future career field.

As previously noted, on-line courses offer an outreach advantage to a communication program. Increased enrollments and revenues can result from distance learning and reaching new student populations. Consider—it has been estimated that, in the next ten years or so, about 1-billion Chinese will come on line. These people will be just six seconds away from our on-line universities. Suppose only one percent of those people decide to take an on-line course; that would be 10-million potential students. Suppose only one-percent of those enroll in US American institutions. That's 100,000 students enrolled on line. Suppose only one-percent of those enroll in your institution and you have a thousand new students. If they pay $65.00 per hour for a 3-hour course, and the thousand students enroll in only one course, the additional revenues to your college would be $195,000. That certainly qualifies as an outreach advantage!

Put another way, if you have 30 students in each of three courses each semester, plus 30 students in each of three courses in the summer, it would take you, personally, about two years to reach as many students.

Final Thoughts

The challenge of developing a high-technology supporting unit or an entire on-line curriculum seems almost overwhelming. However, students and the institution can benefit from the exercise. Benefits to faculty members who must do the work are not so clear. The question remains, then, Is the cost of such an effort worth the payoffs to be derived?.

On the other hand, we live in an era of convergence. The mass media and the personal media are becoming the same medium as the Internet becomes more powerful and more extensive. All communication majors must be knowledgeable of these trends. The rapidly increasing capabilities for interpersonal linkage, research and mass publication seem a given in their future. From television broadcasters to ministers , from research scholar to public relations practitioner, all our students must be trained to use the power of the new communication medium. We can't resist the trend. We must adapt to it.

Professors who do not invest the time to course development and modification now will be in little demand by the communication programs of tomorrow. Programs that do not see the value of investing in such a curriculum will be passed over by students who see the future of communication. Students who do not seek out and take advantage of a high-tech curriculum will not be ready for the communication systems of the future.

Thus, despite the costs involved, we believe the time to develop high-tech supplements to extant courses, and on-line curriculum has come.

Example: CA492-ISD 492

Communication and the Internet

The Department of Communication at the University of South Alabama, in conjunction with the College of Education, recently developed a special topics course: *Communication and the Internet*. (http://www.usouthal.edu/usa/communications/hanna/Ahome/492syl.html) This undergraduate/graduate course attempted to show students the organizational structure of the Internet and World Wide Web, the aesthetics of Web page development, the usefulness of on-line

services to community organizations, and some basic understanding of the Web page software, Adobe *PageMill*. For a look at the work the students produced.

Some Additional On-line Resources

Below is a *short* list of some existing World Wide Web on-line courses (in communication and other fields) as well as some on-line resources that may improve your development of an on-line communication course. This list is in no way comprehensive, nor does it necessarily contain the BEST resources. Rather, it is a list of example links that the authors found in preparation for this conference. The authors wish to remind the reader of the fluid nature of Web "publishing" and that these links may have changed by the time you attempt to access them. We encourage you to utilize Yahoo (http://www.yahoo.com/), AltaVista (http://www.altavista.digital.com/), or another Web search engine to find more current, user-specific, links.

More Example On-line Courses & Tutors

AlienFlower Poetry Workshop, Online Class Discussion.

(http://www.sonic.net/web/albany/workshop/).

Business Communication Course Online.

(http://www.monash.edu.au/busman/buscom/).

GAMMA Online Dox Class.

(http://gamma1.magnet.fsu.edu/~gamma/htmldox/classes/).

International Communication Coursebook Outline.

(http://jcomm.uoregon.edu/~robinson/j649/book.html).

Internet Navigation Course Lessons On-line.

(http://rvcc.raritanval.edu/~preddy/internet_course.html).

Purdue University's On-line Writing Lab (http://owl.trc.purdue.edu/by-topic.html).

M. Mark Miller's Home Page (featuring several on-line courses in communication).

(http://excellent.com.utk.edu/~mmmiller/)

Miami Christian University Courses and Degrees via the Internet (http://mcu.edu/intro.htm).

Microsoft Online Institute. (http://moli.microsoft.com/).

Queen's Univ. Information Technology Services--Learning Technology Unit. On-line Course Examples. (http://www.ccs.queensu.ca/ltu/onlncrs.html).

University of Phonex On-Line Campus. (http://www.uophx.edu/online/).

On-line Course Development Resources

Communicating in an On-line Course: How is it done? (http://arts.uwaterloo.ca/ENGL/courses/engl210E/210e/assigns/4/html/hlclemen/sec_3.htm)

Edmonds Community College On-line Course Reference Manual (designed more for the student than the professor). (http://www.edmonds.ctc.edu/cce/manual.html).

Instructional Design: "Below is a model of an instructional module ..." (http://ksar.cpd.usu.edu/design.html)

N.A. Web '95. Educational Opportunities on the World Wide Web. Sponsored by the University of New Brunswick and The Department of Extension and Summer. (http://www.discribe.ca/conf1995/naweb95/).

New CONDES software for course planning (http://fourier.dur.ac.uk:8000/~dma0rcj/CONTDES.html)

Wilderness Medical Associates Emergency Training for Outdoor Professionals GENERAL INFORMATION AND COURSE PLANNING CHECKLIST (primarily for setting up "real world" courses) (http://wildmed.com/course_guide/gen_info_and_checklist.html)